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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/307,187	05/07/1999	KENNETH M. FRIEDLAND	112764.200	4512

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EXAMINER	
BACHNER, REBECCA M	
ART UNIT	**PAPER NUMBER**
3623	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

Pr

Office Action Summary	Application No. 09/307,187	Applicant(s) FRIEDLAND ET AL.	
	Examiner Rebecca M Bachner	Art Unit 2163	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 07 May 1999 .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-26 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-26 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 07 May 1999 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Detailed Action

This is a first office action on the merit. Claims 1-26 are pending.

Information Disclosure Statement

1. The examiner did not review the Information Disclosure Statement provided on January 27, 2000 as the Applicant did not correctly complete Form 1449 and attach the correct documents. The entire reference is required to be submitted with the IDS, not only the abstract, in order for U.S. or foreign patents to be in the correct format for review. See 37 C.F.R. 1.98(2)(i). Applicant should also refer to MPEP§ 609 ~~608.05~~ as to how to fill out Form 1449.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fields et al.

As per claim 1, Fields et al. disclose a method of allocating resources including scheduling jobs from among a plurality of resources of a work-producing system, said method comprising the steps of:

(a) sorting, in a predetermined order, available resources by last task assignment, a number of tasks performable, rate per task, and cost per hour, and determining at least one queue responsive to said sorting (see column 2, lines 12-35, and column 6, lines 51-65, the resources are sorted; see column 1, lines 32-45, and column 6, lines 43-46, resources were sorted according to pay rate and rate per task);

(c) assigning the available resources to at least one task with a predetermined normalized queue subject to at least one task constraint (see column 1, lines 32-45, and column 2, lines 12-35, the resources are constrained).

Fields et al. do teach the method of determining the average time for a task and also the percentage of the employee's time that it takes to work on a particular task. However, Fields et al. do not explicitly teach the method of normalizing. Normalization is an old and well-known technique in the art used in ordering and ranking items. Dividing each item by the average normalizes the items. Therefore, it would be obvious for one skilled in the art to (b) normalize the at least one queue by dividing a current task queue by an average rate of the available resources for each task in the current task queue based on the process Fields et al. has used. One of ordinary skill in the art would have normalized the tasks as the tasks are already assigned to the resource based on time, priority, skill levels and other constraints. One would be motivated to normalize the task rates as it allows one to quickly determine which tasks take a longer

amount of time and assign them to the appropriate resources. Normalizing the tasks makes the assignment (c) easier as it could increase the efficiency by which the tasks are assigned.

As per claim 2, Fields et al. discloses a method of allocating resources according to claim 1, further comprising the step of predetermining the at least one queue after assignment of the available resources, and designating the assigned resource unavailable until a predetermined time when the assigned available resources expires (see column 5, lines 59-58, through column 6, lines 1-2, the tasks are in a task line and the arrangement of the queue is determined, the resource becomes available and is able to take another item from the task list when a shift is completed).

As per claim 3, Fields et al. disclose a method of allocating resources according to claim 1, further comprising the step of incrementing time to time of a next event (see column 3, lines 58-64, column 4, lines 37-49, and column 5, lines 8-29, the time of the task is determined; the time is incremented to find the time of the next event).

As per claim 4, Fields et al. disclose a method of allocating resources according to claim 1, wherein the at least one task constraint includes maximum resource capacity, defined start and end times, and scheduled down time (see column 1, lines 32-45, and column 3, lines 9-15, task constraints include capacity and labor regulations, which define start and end times, as well as scheduled down time).

As per claim 5, Fields et al. disclose a method of allocating resources according to claim 1, wherein the at least one task constraint includes at least one team assignment constraint, and the available resources are assigned to the at least one task until the at least one team assignment constraint is satisfied (see column 1, lines 32-45, and column 2, lines 12-35, the task constrain includes a team assignment constraint such as the skill level of the employee or the relationship between the different tasks).

As per claim 6, Fields et al. disclose a method of allocating resources according to claim 1, wherein said assigning step (c), further comprises the steps of assigning the available resources to the at least one task for a maximum time of task, and removing the at least one task from a resource skill set (see column 1, lines 15-45, and column 3, lines 9-15, the maximum time of a task is determined and the task is removed from the resource when an employee maximum shift length occurs).

As per claim 7, Fields et al. disclose a method of allocating resources according to claim 1, wherein the at least constraint includes an end of shift constraint, and wherein the available resources are not assigned to the at least one task when the assignment violates the end of shift constraint (see column 3, lines 9-15, the end of shift constraint may be due to labor regulations as it could be the resource, or employee, reached their maximum shift length or their break-time and therefore are not assigned another task).

As per claim 8, Fields et al. disclose a method of allocating resources according to claim 1, wherein the predetermined order comprises an ascending order (see column 5, lines 59-67, through column 6, lines 1-2, the resources are allocated in an ascending order, tasks that require a higher skill level are assigned to resources that have a higher skill level).

As per claim 9, Fields et al. disclose a method of allocating resources according to claim 1. Fields et al. do teach the method of determining the average time for a task and also the percentage of the employee's time that it takes to work on a particular task. However, Fields et al. do not explicitly teach the method of normalizing. Normalization is an old and well-known technique in the art used in ordering and ranking items. Dividing each item by the average normalizes the items. Therefore, it would be obvious for one skilled in the art to comprise a largest normalized queue based on what the process Fields et al. has used. One of ordinary skill in the art would have normalized the tasks and found a largest queue as the tasks are already assigned to the resource based on time, priority, skill levels and other constraints. One would be motivated to normalize the task rates as it allows one to quickly determine which tasks take a longer amount of time and assign them to the appropriate resources. Normalizing the tasks makes the assignment (c) easier as it could increase the efficiency by which the tasks are assigned.

As per claim 10, Fields et al. disclose a method of allocating resources according to claim 1, wherein said sorting step (a), said normalizing step (b) and said assigning step (c) are performed according to a resource allocation model, and wherein the resource allocation model includes entities with variable attributes having variable quantities that transform through at least one network of nodes (see column 6, lines 51-65, the resources, or employees, with attributes that have quantities that are transformed; for example, the number and skill level of the employees is updated during the shifts in the schedule).

As per claim 11, Fields et al. disclose a method of allocating resources according to claim 10, wherein each node of the at least one network of nodes includes an associated set of attributes and parameters (see column 6, lines 51-65, attributes and parameters are associated with the nodes).

As per claim 12, Fields et al. disclose a method of allocating resources according to claim 11. Fields et al. do teach a Gantt Chart which displays the attributes and the entities in a graphical formation. Fields et al. do not teach that the attributes are qualitatively defined through at least one of nominal, graphical and symbolic conventions. However, it is an old and well known technique in the art to quantitatively define attributes through nominal, graphical and symbolic conventions. Pie charts, Gantt charts, and icons are commonly used to represent attributes. Therefore, it would be obvious to one of ordinary skill in the art to use a nominal, graphical, or symbolic

convention to qualitatively define an attribute. One would be motivated to quantitatively define the attributes in this manner as it is a user-friendly way to depict them.

As per claim 13, Fields et al. disclose a method of allocating resources according to claim 12, wherein the available resources include the attributes of the nodes, and the available resources undergo transformational processes arriving at least one arbitrary state or passing through a series of states that may become the attributes of the resources (see column 6, lines 51-68, through column 7, lines 1-7, the resources undergo a transformation by going through a state or states).

As per claim 14, Fields et al. disclose a method of allocating resources according to claim 11, wherein the parameters are specified as at least one of inputs, outputs, capacities, operational processes, functional behaviors, movement logics, and other dynamic parameters (see column 6, lines 21-26, and 43-65, the parameters of the resources are specified).

As per claim 15, Fields et al. disclose a method of allocating resources according to claim 10, wherein the resource allocation model stores at least one of historical values, theoretical values, the attributes and constellations of the nodes, and wherein the resource allocation model provides multiple bases of comparison for monitoring, measuring, and evaluating real-time operational data and operational performance for management functions (see column 1, lines 9-15, and column 2, lines 12-35, the model

stores and uses historical data which it can use to evaluate operational data and performance. It is inherent that the historical data would be kept and used for a purpose).

As per claim 16, Fields et al. disclose a method of allocating resources according to claim 10. Fields et al. teach a resource allocation model. However, Fields et al. do not explicitly teach a model that includes significance and performance criteria, associated tableaus and scenarios, and wherein abstract model elements are stored as at least one of the parameters and the attributes, and as at least one of functional, logical, graphical and symbolic forms. However, significance and performance criteria are old and well known techniques used in the art. Processes are constantly evaluated to evaluate current results and determine improvements. Therefore, it would be obvious to include significance and performance criteria as it would allow one to determine the efficiency of the scheduling. It would also be obvious to store parameters and attributes as at least one of functional, logical, graphical and symbolic forms as it would be and efficient way to display the parameters and the attributes. One would be motivated to include both the significance and performance criteria, as well as the stored format of the parameters as it would be very user-friendly.

As per claim 17, Fields et al. disclose a method of allocating resources according to claim 1, wherein the available resources are characterized by the following information:

• person identifier, person name, person type, shift assignment by day of week, task preference (see column 6, lines 49-65),

• shift name, shift start time, shift end time, lunch start, break 1 start, break 2 start (see column 4, lines 37-48, the shift times are set; see column 3, lines 9-15, the breaks and meal times are mandated by labor regulations),

• person type categories, eligible tasks (see column 6, lines 51-54, the skills characterize the employee),

• task name, rate per task, task capacity, task color for Gantt chart, flow percentages between tasks (see figure 3, column 1, lines 32-45, and column 6, lines 43-46, resources were sorted according to pay rate and rate per task; and task capacity),

• projected incoming volume by task and time (see column 7, lines 18-22), and

• start of day queues in each task (see column 6, lines 21-27, the record contains the start times for each task and each resource).

As per claim 18, Fields et al. disclose a method of allocating resources according to claim 1, wherein said assigning step (c) assigns the available resources using at least one of the following outputs:

• people allocation: number of people assigned to each task for each time period (see column6, lines 21-32, the Schedule Head Record contains each persons task at a particular time period),

• queue data: queue length for each task area by time period (see column 6, lines 51-68, through column 7, lines 1-7), and

• Gantt chart: person task assignment for each time period (see figure 3).

Fields et al. do not explicitly teach that the volume data is the number of RX's processed in each task for each time period. However, it would be obvious to one of ordinary skill that in order to schedule tasks the number of tasks must be known. One of ordinary skill in the art would be motivated to include the volume data as it explicitly discloses the volume of the tasks and allows a more accurate description of the number of tasks that the user must assign to resources.

As per claim 19, Fields et al. disclose a method of allocating resources according to claim 1, wherein said assigning step (c), further comprises the steps of assigning the available resources to a varying set of tasks having varying individual rates (see column 3, lines 37-6, lines 43-46, the resources are assigned to tasks with varying rates).

As per claim 20, Fields et al. disclose a method of allocating resources according to claim 1. Fields et al. did not explicitly teach the use of Markov Chains. However, one of ordinary skill in the art would teach the assigning step (c) further comprising the steps of assigning the available resources to the at least one task with a work flow between tasks following a Markov Chain. It would have been obvious to one of ordinary skill in the art to use Markov Chains as they are a very well known type of queuing theory. One of ordinary skill in the art would have been motivated to using Markov Chains as it would allow the user to easily picture the flow between tasks. One would be motivated to use Markov Chains as they are a reliable and accurate way to depict queuing theory.

As per claim 21, Fields et al. disclose a method of allocating resources according to claim 3, wherein the next event includes at least one of a resource or task that becoming subsequently available, incoming work, a queue reaching zero, and a minimum time in the task (see column 6, lines 26-32, 51-68, through column 7, lines 1-7, once the resource and task becomes available a new task is assigned knowing the task's minimum time).

As per claim 22, Fields et al. disclose a method of allocating resources according to claim 1, further comprising the step of repeatedly performing said steps (a) - (c) until the end of a predetermined time period is reached (see column 3, lines 46-67, the steps are repeated until closing time of each store location).

As per claim 23, Fields et al. disclose a method of allocating resources according to claim 1, further comprising the step performing the at least one task responsive to the resource assigned in said assigning step (c) (see column 2, lines 12-35, the resource completes the task assigned and then performs another task).

As per claim 24, Fields et al. disclose a method of allocating resources according to claim 1. Fields et al. teach a system that can be used for any type of resource allocation. Fields et al. do not explicitly teach of the system comprising a pharmacy. However, it would be obvious to one of ordinary skill in the art to use the work producing

system in a pharmacy since a pharmacy is nothing more than a specialized system (i.e. for distributing pharmaceuticals) which requires an efficient way to allocate resources and tasks. One of ordinary skill in the art would be motivated to use the system of Fields et al. in a pharmacy as it is an effective and helpful way to schedule employees in any type of resource/task environment.

As per claim 25, Fields et al. disclose a method of allocating resources including scheduling jobs from among a plurality of resources of a work-producing system, said method comprising the steps of:

(a) sorting, in a predetermined order, available resources to be utilized in the pharmacy by at least one of a last task assignment, a number of tasks performable, rate per task, and cost per hour, and determining at least one queue responsive to said sorting (see column 2, lines 12-35, and column 6, lines 51-65, the resources are sorted; see column 1, lines 32-45, and column 6, lines 43-46, resources were sorted according to pay rate and rate per task);

(c) assigning the available resources to at least one task with a predetermined normalized queue subject to at least one task constraint (see column 1, lines 32-45, and column 2, lines 12-35, the resources are constrained).

Fields et al. also teach the method of determining the average time for a task and also the percentage of the employee's time that it takes to work on a particular task. However, Fields et al. do not explicitly teach the method of normalizing. Normalization is an old and well-known technique in the art used in ordering and ranking items.

Dividing each item by the average normalizes the items. Therefore, it would be obvious for one skilled in the art to (b) normalize the at least one queue by dividing a current task queue by an average rate of the available resources for each task in the current task queue based on what the process Fields et al. has used. One of ordinary skill in the art would have normalized the tasks as the tasks are already assigned to the resource based on time, priority, skill levels and other constraints. One would be motivated to normalize the task rates as it allows one to quickly determine which tasks take a longer amount of time and assign them to the appropriate resources. Normalizing the tasks makes the assignment (c) easier as it could increase the efficiency by which the tasks are assigned.

Fields et al. do not explicitly teach of the system comprising a pharmacy. However, it would be obvious to one of ordinary skill in the art to use the work producing system in a pharmacy since a pharmacy is nothing more than a specialized system (i.e. for distributing pharmaceuticals) which requires an efficient way to allocate resources and tasks. One of ordinary skill in the art would be motivated to use the system of Fields et al. in a pharmacy as it is an effective and helpful way to schedule employees in any type of resource/task environment.

As per claim 26, Fields et al. disclose a computer program memory, storing computer instructions to allocate resources including scheduling jobs from among a plurality of resources of a work-producing system, the computer instructions including:

(a) sorting, in a predetermined order, available resources to be utilized in the pharmacy by at least one of a last task assignment, a number of tasks performable, rate per task, and cost per hour, and determining at least one queue responsive to said sorting (see column 2, lines 12-35, and column 6, lines 51-65, the resources are sorted; see column 1, lines 32-45, and column 6, lines 43-46, resources were sorted according to pay rate and rate per task);

(c) assigning the available resources to at least one task with a predetermined normalized queue subject to at least one task constraint (see column 1, lines 32-45, and column 2, lines 12-35, the resources are constrained).

Fields et al. also teach the method of determining the average time for a task and also the percentage of the employee's time that it takes to work on a particular task. However, Fields et al. do not explicitly teach the method of normalizing. Normalization is an old and well-known technique in the art used in ordering and ranking items. Dividing each item by the average normalizes items. Therefore, it would be obvious for one skilled in the art to (b) normalize the at least one queue by dividing a current task queue by an average rate of the available resources for each task in the current task queue based on what the process Fields et al. has used. One of ordinary skill in the art would have normalized the tasks as the tasks are already assigned to the resource based on time, priority, skill levels and other constraints. One would be motivated to normalize the task rates as it allows one to quickly determine which tasks take a longer amount of time and assign them to the appropriate resources. Normalizing the tasks

makes the assignment (c) easier as it could increase the efficiency by which the tasks are assigned.

. Fields et al. do not explicitly teach of the system comprising a pharmacy. However, it would be obvious to one of ordinary skill in the art to use the work producing system in a pharmacy since a pharmacy is nothing more than a specialized system (i.e. for distributing pharmaceuticals) which requires an efficient way to allocate resources and tasks. One of ordinary skill in the art would be motivated to use the system of Fields et al. in a pharmacy as it is an effective and helpful way to schedule employees in any type of resource/task environment.

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Eder (P.N. 6,321,205) discusses a method and system for modeling using Markov Chains.

Arbabi et al. (P.N. 5619695) discusses an improved scheduling system that uses a model to sort tasks.

Fox (P.N. 5890134) discusses a scheduling algorithm.

Sisley et al. (P.N.5943652) discusses a system and method for optimizing the matching of resources and tasks.

Puram et al. (P.N. 6289340) discusses a system, apparatus, and method for determining the best match for a resource and a task.

5 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rebecca Bachner whose telephone number is 703-305-1872. The examiner can normally be reached Monday - Friday from 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz, can be reached at 703-305-9643.

The fax numbers for the organization where this application or proceeding is assigned are as follows:

703-746-7238	[After Final Communication]
703-746-7239	[Official Communications]
703-746-7240	[For status inquiries, draft communication]

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

KYLE J. CHOI
PRIMARY EXAMINER
Art Unit 2163

RMB
RMB

April 10, 2002